

## **F. GLOSSARY**

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**Access control** refers to all activities accomplished for the purpose of controlling entry or re-entry into a restricted zone because of radiological contamination to minimize the radiation exposure of individuals. This function is needed to prevent the general public from entering the restricted zone and permitting only emergency workers with essential missions and limited members of the general public to enter a restricted zone.

**Activation** refers to a process by which a facility is brought up to emergency mode from a normal mode of operation. Activation is completed when the facility is ready to carry out full emergency operations.

**Action levels** refers to thresholds for contamination levels that trigger the need for decontamination established in the plans.

**Alerting of personnel** refers to transmission of a signal or message that places personnel on notice that a situation has developed that may require that they report for emergency duty.

**Alerting the public** refers to activating an attention-getting warning signal through such means as sirens, tone alert radios, route alerting, and speakers on cars, helicopters, and boats.

**Area Recommended For Improvement (ARFI)** is an aspect of emergency preparedness that could be improved and which is not required to be corrected.

**Area Requiring Corrective Action (ARCA)** is an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety. The correction of an ARCA is required by the next scheduled biennial exercise. An ARCA may be reclassified as a Deficiency under two conditions: First, when the collective impact of two or more ARCAs on an organization's emergency functioning precludes adequate protection of public health and safety. Second, for recidivism, when an organization repeatedly demonstrates the inability to correct one or more previously-identified ARCAs over a period of two or more biennial exercises.

**Buffer zone** refers to an area adjacent to a restricted zone, to which residents may return, but for which protective measures are recommended to minimize exposure to radiation.

**Buffer zone (medical facilities)** indicates an area adjacent to the radiological emergency area (restricted zone) for which protective measures are recommended to minimize both exposure to radiation and the spread of radiological contamination to radiological clean areas of the facility.

**Chain-of-custody** form refers to the documentation of the transfer of samples from one organization/individual to another with respect to the name of the organization/individual and dates of acceptance and/or transfer of samples.

**Check source** refers to a radioisotope with a relatively fixed activity level used to determine the responsiveness of survey instruments.

**Committed dose** refers to the dose that will be received over a period of 50 years from the ingestion or inhalation of a particular quantity of a radionuclide or a specific mix of radionuclides.

**Committed effective dose equivalent** refers to the sum of the 50-year committed doses to individual organs from inhalation (or ingestion) of radionuclides, where the individual organ doses have been adjusted so that the associated risk of fatal cancer can be added to the risk of fatal cancer from whole-body dose.

**Congregate care** refers to the provision of temporary housing and basic necessities for evacuees.

**Congregate care center** refers to a facility for temporary housing, care, and feeding of evacuees.

**Contaminated** refers to the adhesion of radioactive particulates on individuals and objects.

**Contaminated, injured, or exposed individuals** refers to individuals who are: contaminated, contaminated and otherwise physically injured, or exposed to high levels of radiation.

**Control cell** refers to exercise personnel who facilitate interfaces with nonparticipating groups, such as State and local government officials and special needs populations.

**Controller** refers to an individual who directs the flow of scenario events to ensure that the conduct of exercises is effected in accordance with agreed-upon objectives and extent of play.

**Controller inject** refers to the introduction of events, data, and information into exercises to drive the demonstration of objectives.

**Counting** refers to using an instrument to detect individual particles or gamma rays which interact with the detector on the instrument. For example, ambient radiation can be counted, or, alternatively, the radiation emitted by specific samples can be counted.

**Deficiency** is defined as an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness

is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant.

**Derived response level** is a calculated concentration of a particular radionuclide in a particular medium (e.g., food) that will produce a dose equal to a protection action guide.

**Direction and control** refers to the management of emergency functions within a particular context (e.g., emergency operations center) through leadership and use of authority.

**Disabled individuals** refers to individuals who are deaf, blind, non-ambulatory and require support (e.g., crutches), frail, dependent upon life-support systems, or mentally or emotionally impaired.

**Dose equivalent** refers to radiation dose to the whole body or a single organ that has been adjusted to make it equivalent in risk of cancer to the amount of dose from gamma radiation that would cause the same risk of cancer. No adjustments are required for the predominate types of radiation associated with reactor accident source terms.

**Dose limits for emergency workers** refers to the allowable accumulated dose during the entire period of the emergency. Action to avoid exceeding the limit is taken based on actual measurements of integrated gamma exposure. In contrast, protection action guides are trigger levels of projected dose at which actions are taken to protect the public. These actions are taken prior to the dose being received.

**Drill** refers to an event involving organizational responses to a simulated accident to develop, test, and monitor specialized emergency skills that constitute one or more component of an emergency plan and procedure.

#### **Emergency classification level(s) (ECL):**

- (1) **Notification of Unusual Event** indicates that unusual events are in process or have occurred that indicate a potential degradation in the level of plant safety. No releases of radioactive material requiring offsite response or monitoring are expected, unless further degradation of safety systems occurs.
- (2) **Alert** indicates that events are in process or have occurred that involve an actual or potential substantial degradation in the level of plant safety. Releases are expected to be limited to small fractions of the Environmental Protection Agency (EPA) protective action guides (PAG) exposure levels.
- (3) **Site Area Emergency** indicates that events are in process or have occurred that involve actual or likely major failures in the plant functions needed for

protecting the public. Releases are not expected to exceed EPA PAG exposure levels, except near the site boundary.

- (4) **General Emergency** indicates that events are in process or have occurred that involve actual or imminent substantial core degradation or melting, with potential for loss of containment integrity. Releases can reasonably be expected to exceed EPA PAG exposure levels offsite, beyond the immediate site area.

**Emergency information** refers to material designed to improve public knowledge or understanding of an emergency.

**Emergency instructions** refers to information provided to the general public during an emergency pertaining to protective action recommendations for actions such as evacuation and sheltering.

**Emergency operations center** refers to a facility that is the primary base of emergency operations for an ORO in a radiological emergency.

**Emergency operations facility** refers to a facility that is the primary base of emergency operations for the licensee in a radiological incident.

**Emergency phase** refers to the initial phase of response actions, during which actions are taken in response to a threat of release or a release in progress.

**Emergency worker** refers to an individual who has an essential mission within or outside the plume exposure pathway emergency planning zone to protect the health and safety of the public who could be exposed to ionizing radiation from the plume or from its deposition.

Some examples of emergency workers are: radiation monitoring personnel; traffic control personnel; evacuation vehicle drivers; fire and rescue personnel, including ambulance crews; medical facilities personnel; emergency operations center personnel; personnel carrying out backup alerting procedures; and essential services or utility personnel.

**Essential emergency functions** are communications, direction and control of operations, alert and notification of the public, accident assessment, information for the public and media, radiological monitoring, protective response, and medical and public health support.

**Evacuation time estimate** is an estimate, contained in emergency plans, of the time that would be required to evacuate general and special populations within the plume pathway emergency planning zone under emergency conditions.

**Exception area** refers to an area located approximately 5 to 10 miles from a nuclear power plant and specifically designated in an organization's plan, for which the 15-minute alerting and notification provision does not apply. For these areas, off-site authorities have

approximately 45 minutes to complete alert and notification of the public.

**Exercise** refers to an event involving organizational responses to a simulated commercial nuclear power plant accident with radiological and other offsite consequences. The purpose of an exercise is to test the integrated capabilities of involved organizations to implement emergency functions set forth in plans and procedures.

**Exercise issue** refers to a problem in organizational performance that is linked with specific NUREG-0654 standards and applicable evaluation criteria. There are three categories of exercise issues: Deficiencies, Areas Requiring Corrective Actions, and Areas Recommended for Improvement

**Exposure rate** refers to the amount of gamma radiation that a individual would receive in one hour as measured in air (typically expressed in units of milliroentgens per hour or Roentgens per hour).

**Facility** refers to any building, center, room(s), or mobile unit(s) designed and equipped to support emergency operations.

**Federal or other support organizations** refers to Federal agencies such as FEMA, the U.S. Department of Energy, the U.S. Nuclear Regulatory Commission, or any other governmental, quasi-governmental, or private organizations (e.g., American Red Cross, Civil Air Patrol, Radio Amateur Civil Emergency Services, cooperating state compact radiological monitoring or sampling personnel, and national or university laboratories) that may provide assistance in radiological emergencies.

**Field Team Coordinator** refers to the individual who manages the functions of field teams and coordinates data with the dose assessment group located in emergency operation centers and facilities.

**Fixed contamination** refers to contamination that remains after loose contamination has been removed by decontamination.

**Fixed (reproducible) geometry** refers to a method of measuring levels of radioactivity in samples by using a standard size or volume of samples held at a fixed distance from the measuring instrument.

**Full participation exercise** refers to a joint exercise in which: (1) State and local government and licensee emergency personnel and other resources are mobilized in sufficient numbers to adequately demonstrate and test their planning and preparedness

capabilities to respond to a simulated radiological emergency; (2) the integrated capabilities of organizations to adequately assess and respond to a radiological accident are demonstrated; and (3) the implementation of the observable elements of State and/or local and licensee plans and preparedness is tested.

**Geiger-Mueller detector** refers to a type of radiation detector that can be used to measure the gamma, or beta plus gamma radiation depending on whether the detector is covered by a beta shield.

**Half-life** refers to the time required for a particular quantity of a radionuclide to reduce the rate at which it emits radiation by one half.

**Health physics technician** refers to an individual trained in radiation protection.

**High exposure rate** refers to rates greater than 100 milliroentgens per hour.

**High levels of radiation exposure** refers to doses of 100 rem or greater.

**Host area** refers to a geographical area outside the plume pathway emergency planning zones where functions such as congregate care, radiological monitoring, decontamination, and registration are conducted.

**Host regional office** refers to the FEMA Regional Office that has program jurisdiction for a site because of the location of a commercial nuclear power plant within its regional borders.

**Institutionalized individuals** are individuals who reside in institutions, such as nursing homes or prisons, and may need to depend on others for assistance with protective actions. Institutionalized individuals may or may not have special needs.

**Isotope** refers to one of two or more atoms of an element which have the same number of protons in the nucleus but a different number of neutrons. Some isotopes of a particular element may be radioactive while the others are not.

**Key staff** refers to those emergency personnel, sufficient in numbers and functions, necessary to carry out emergency operations as required by scenario events and as set forth in the plans.

**KI (potassium iodide)** is a prophylactic drug that can be used effectively to block the uptake of radioiodine by the thyroid gland.

**Licensee offsite response organization (licensee ORO)** refers to the licensee's offsite emergency response organization comprised of licensee, State and local government, volunteer and other support personnel required to implement the licensee's ORO plan.

Such an organization entity is typically employed for situations where State and local governments do not participate in radiological emergency planning and preparedness.

**Low exposure rate** refers to rates less than 100 milliroentgens per hour.

**Maximally exposed individual** refers to a hypothetical individual who receives the greatest possible projected dose in the area of highest radiation levels over a specified period of time.

**Measuring** refers to counting to detect radiation levels or determining other parameters, such as the energy of radiation or physical characteristics of samples, such as the volume of an air sample.

**Media center** refers to a facility staffed by spokespersons from multiple OROs for the purpose of providing a single designated point of contact with the news media and to facilitate exchange and coordination of information among spokespersons from different organizations. This type of facility is also referred to as a Public Information Center, a Joint Information Center, a Public Affairs Center, or an Emergency News Center.

**Mobilized organization** refers to an organization that has completed the alerting, notification, and mobilization of key emergency staff sufficient to carry out the essential emergency functions, as required by scenario events and as set forth in emergency plans.

**Monitoring** refers to the measurement of radiation levels, usually with a portable survey instrument.

**Monitoring and decontamination facility** refers to a temporary facility established outside the plume emergency planning zone for the purpose of monitoring and decontaminating emergency workers, and their vehicles and equipment used in the plume and/or areas contaminated by the plume.

**Noble gases** refers to the chemically inert radioactive gases that are released during an accident at a nuclear power plant.

**Non-participating organizations** refers to State and local governments that are not participating in emergency planning and preparedness for accidents at a commercial nuclear power plant.

**Notification and mobilization of personnel** refers to the transmission of messages to emergency personnel informing them of an emergency situation and directing them to report for emergency duty at their assigned duty stations.

**Notifying the public** refers to distributing an instructional message, either through the Emergency Broadcast System or some other system.



**Off-hours** refers to the hours between 6:00 p.m. and 4:00 a.m. or any weekend hours.

**Offsite response organization** refers to any State and local government, supporting private industry and voluntary organizations and licensee offsite response organizations that are responsible for carrying out emergency functions during a radiological emergency.

**Onsite personnel** refers to licensee or contract personnel working at commercial nuclear power plants.

**Operationally mobilized organization** refers to an organization that has completed the mobilization process required by scenario events and the ORO emergency plan and procedures for specific duty stations. Operational mobilization is achieved when key personnel are at their duty stations prior to the time they need to begin emergency operations, except for fast-breaking emergency situations.

**Partial participation exercise** refers to the engagement of State and local government personnel in an exercise sufficient to adequately test facility-based direction and control functions for protective action decision making related to the appropriate establishment of emergency classification levels and communication capabilities among affected State and local governments and the licensee. During partial participation exercises, it is not necessary to demonstrate field-based function. Partial participation, as defined, typically refers to the limited participation of State governments in an exercise; however, in some cases, this concept can be used to refer to an exercise in which local governments have limited participation. Limited participation of State and local organizations is permitted to provide relief to organizations that have responsibilities for two or more sites.

**Plan** refers to an organization's documented concept of operations and implementing procedures for managing its internal response and coordinating its external response with other organizations to radiological emergencies.

**Planning area** refers to a predesignated geographic subdivision of the plume pathway emergency planning zone. In some plans, it may be referred to as an Emergency Response Planning Area or an equivalent term.

**Plume dose projections** are estimates of dosage to the public from exposure to the plume, over a period of time, in the absence of initiating protective actions.

**Portal monitor** refers to a radiation monitor consisting of several radiation detectors arranged in a fixed position within a frame that forms a passageway for individuals being monitored.

**Potential dose** refers to an amount of radiation dose that could result from a particular set of plant conditions but is not supported by estimated or measured releases or measured

environmental levels.

**Precautionary action** is a protective action taken on the basis of the potential for a release of radioactive material, such as an embargo of food products.

**Pre-operational exercise** refers to an exercise conducted prior to the issuance of a full-power license of a commercial nuclear power plant by the Nuclear Regulatory Commission

**Projected dose** is the estimated or calculated amount of radiation dose to an individual from exposure to the plume and/or deposited materials, over a period of time, in the absence of protective action.

**Protective action guide (PAG)** refers to projected dose to an individual in the general population that warrants the implementation of protective action. Specific PAG's have been recommended in terms of the level of projected dose that warrants the implementation of evacuation/sheltering, relocation, and limiting the use of contaminated food, water, or animal feed.

**Precautionary action** is a protective action taken on the basis of the potential for a release of radioactive material, such as an embargo on food products.

**Preventive protective actions** are ingestion measures that may be taken to prevent or reduce contamination of milk, food, and drinking water.

**Radiation Safety Officer** refers to a health physicist or other individual experienced in radiation protection who advises medical facility staff regarding the hazards associated with high levels of radiation.

**Radiological emergency area** refers to an area established on an ad hoc basis in a medical facility for monitoring, decontamination, and treatment of contaminated injured individuals, and for contamination control.

**Radionuclide** refers to a radioactive isotope of a particular element.

**Reception center** refers to a facility where monitoring, decontamination, and registration of evacuees is conducted.

**Recovery** refers to the process of reducing radiation exposure rates and concentrations of radioactive material in the environment to acceptable levels for return by the general public for unconditional occupancy or use after the emergency phase of a radiological emergency.

**Recovery worker** refers to an individual who is permitted to enter the restricted zone under controlled conditions to perform work or to retrieve valuable property.

**Re-entry** refers to temporary entry of individuals into a restricted zone under controlled conditions.

**Relocation** refers to a protective action, taken in the post-emergency phase, through which individuals not evacuated during the emergency phase are asked to vacate a contaminated area to avoid chronic radiation exposure from deposited radioactive material.

**Relocation center** refers to a facility where monitoring, decontamination, registration, and congregate care of evacuees is conducted.

**Responsible offsite response organization (responsible ORO)** refers to an organization designated in an emergency response plan as that organization responsible for a specific emergency function.

**Responsible school official(s)** refers to the official(s) of the schools participating in the exercise, who are responsible for implementing school emergency procedures, according to the plan.

**Restricted zone** refers to an area of controlled access from which the population has been evacuated or relocated.

**Return** refers to reoccupation of areas cleared for unrestricted residence or use by previously evacuated or relocated populations.

**Rumors** refers to information circulated by individuals and organizations during an emergency that may or may not be true. (Usually, rumors originate and are spread on an ad hoc, not official basis.)

**Sampling** refers to collecting specimens of materials (e.g. particles or radioiodine in the air) at field locations.

**Schools** are primarily intended to refer to public schools. However, because of the interest of private schools, kindergartens, and day care centers in participating in Radiological Emergency Preparedness exercises, this term may be expanded to include these groups.

**Special populations** are groups of individuals with physical or mental handicaps that need assistance when protective actions are implemented.

**Traffic control** refers to all activities accomplished for the purpose of facilitating the evacuation of the general public in vehicles along specific routes.

**Transportation-dependent individuals** refers to those individuals who do not have their own transportation and must depend on other individuals, taxis, or public transportation.

**Turn-back values** are total accumulated external exposure limits or exposure rates, established by the offsite health authority, at which the emergency worker should leave the area without further consultation or direction.

**Unannounced exercise (or drill)** refers to an exercise (or drill) for which knowledge of the exact date and time is restricted to those individuals with a need to know.

**Urgent medical condition**, as used in these objectives, refers to problems for which a delay in treatment may cause extended recovery time, reduced level of recovery, or death.

**Walk-through** refers to a type of evaluation in which evaluators inspect the physical layout of a facility or area including equipment, attendant resources, and procedures to determine conformity with specific ORO plans.